



SEQUENCE LISTING

<110> Horwitz, Marcus A.
Harth, Gunter
Lee, Bai-Yu

<120> Abundant Extracellular Products and
Methods for Their Production and Use

<130> 510030-143

<140> US 08/786,533

<141> 1997-01-21

<150> US 08/568,357

<151> 1995-12-06

<150> US 08/551,149

<151> 1995-10-31

<150> US 08/447,398

<151> 1995-05-23

<150> US 08/289,667

<151> 1994-08-12

<150> US 08/156,358

<151> 1993-11-23

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Ser Met Gly Arg Asp Ile Lys Val Gln Phe Gln Ser Gly Gly Asn Asn

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Ser Pro Ala Val Tyr Leu Leu Asp
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20 25 30
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35 40 45

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			20					25					30		

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			20					25					30		
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			20					25					30		
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			20												

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Ile	Pro	Val	Ala	Phe	Leu	Ala	Gly	Gly	Pro	His	Ala	Val	Tyr	Leu	Leu
			20					25					30		
Asp	Ala	Phe	Asn	Ala	Gly	Pro	Asp	Val	Ser	Asn	Trp	Val	Thr	Ala	Gly
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			20					25					30		
Asp	Ala	Phe	Asn	Ala	Gly	Pro	Asp	Val	Ser	Asn	Trp	Val	Thr	Ala	Gly
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Ser	Met	Gly	Arg	Asp	Ile	Lys	Val	Gln	Phe	Gln	Ser	Gly	Gly	Asn	Asn
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	35					40									

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Ser	Met	Gly	Arg	Asp	Ile	Lys	Val	Gln	Phe	Gln	Ser	Gly	Gly	Asn	Asn
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Ser	Pro	Xaa	Leu	Tyr	Leu	Leu	Asp								
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 Xaa Met Gly Arg Asp Ile
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<213> Mycobacterium tuberculosis

<400> 57

Leu	Thr	Ser	Glu	Leu	Pro	Gln	Trp	Leu	Ser	Ala	Asn	Arg	Ala	Val
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<213> Mycobacterium tuberculosis

<400> 78

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<213> Mycobacterium tuberculosis

<400> 79

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Pro	Asn	Glu	Leu	Gly	Gly	Ala	Asn	Ile	Pro	Ala	Glu	Phe	Leu	Glu
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<210> 81

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<212> PRT

<213> Mycobacterium tuberculosis

<400> 81

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<400> 88
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<210> 89
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 <213> Mycobacterium tuberculosis

<400> 89
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 1 5 10 15

<210> 90
 <211> 15
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 <213> Mycobacterium tuberculosis

<400> 90
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 1 5 10 15

<210> 91
 <211> 15
 <212> PRT
 <213> Mycobacterium tuberculosis

<400> 91
 Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu Gly Ala Gly
 1 5 10 15

<210> 92
 <211> 480
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 92
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 ctaacgatga ccgacaccgt tggccaagtc gtgctcggct ggaaggtcag tgatctcaaa 180
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 gccgacggca tcaactaccg ggtgctgtgg caagccgcgg gccccgacac cattagcgga 360
 gccactatcc cccaaggcga acaatcgacc ggcaaaatct acttcgatgt caccggccca 420
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<210> 93
 <211> 1437
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 93
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 gcctttgaca agagcgtggt tgacgacggc ttggcctttg acggctcgtc gattcgcggg 180
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 tcggtgagct tcgactcgcg cgccaacggc tcctttctacg aggtggacgc catctcgggg 480

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aagatgctga	ccaacctgat	caactccggc	ttcatcctgg	agaagggcc	ccacgagggtg	660
ggcagcgcg	gacaggccga	gatcaactac	cagttcaatt	cgctgctgca	cgccgcccgc	720
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acgttcatgc	ccaagccgct	gttcggcgac	aacgggtccg	gcatgcactg	tcatcagtcg	840
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acggcccgtc	attacatcgg	cggcctgtta	caccacgcgc	cgtcgctgct	ggccttcacc	960
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accagctgtg	cagatgtgat	cgaccgtctc	gaggccgacc	acgaatacct	caccgaagga	1320
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<210> 94
 <211> 686
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 94						
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tgccagattc	aaatgtccga	cccggcctac	aacatcaaca	tcagcctgcc	cagttactac	180
cccgaaccga	agtcgctgga	aaattacatc	gccagacgc	gcgacaagtt	cctcagcgcg	240
gccacatcgt	ccactccacg	cgaagcccc	tacgaattga	atatcacctc	ggccacatac	300
cagtccgcga	taccgccgcg	tggtacgcag	gccgtggtgc	tcaaggtcta	ccagaacgcc	360
ggcggcacgc	acccaacgac	cacgtacaag	gccttcgatt	gggaccaggc	ctatcgcaag	420
ccaatcacct	atgacacgct	gtggcagggt	gacaccgatc	cgctgccagt	cgtcttcccc	480
attgtgcaag	gtgaactgag	caagcagacc	ggacaacagg	tatcgatagc	gccgaatgcc	540
ggttggaccc	gggtgaattat	cagaacttcg	cagtcacgaa	cgacgggggtg	attttcttct	600
tcaacccggg	ggagttgctg	cccgaagcag	ccggccccac	ccagggtattg	gtcccacggt	660
ccgcgatcga	ctcgatgctg	gcctag				686

<210> 95
 <211> 899
 <212> DNA
 <213> Mycobacterium tuberculosis

<400> 95						
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gtgcgcgtgc	cctcgatggg	ccggacatcc	cggtggcctt	cctagccggg	gggcgcgacg	180
cgggtgtatc	gctggacgcc	ttcaacgcgc	gcccggtatg	cagtaactgg	gtcaccgcgg	240
gtaacgcgat	gaacacgttg	gcgggcaagg	ggatttcggg	ggtggcaccg	gcgggtggtg	300
cgtacagcat	gtacaccaac	tgggagcagg	atggcagcaa	gcagtgggac	accttcttgt	360
ccgctgagct	gcccgaactg	ctggccgcta	accggggctt	ggcccccggt	ggccatgcgg	420
ccgttggcgc	cgctcagggc	ggttacgggg	cgatggcgct	ggcggccttc	caccccgacc	480
gcttcggctt	cgctggctcg	atgtcgggct	ttttgtaccc	gtcgaacacc	accaccaacg	540
gtgcgatcgc	ggcgggcatg	cagcaattcg	gcgggtgtga	caccaacgga	atgtggggag	600
caccacagct	gggtcgggtg	aagtggcacg	acccgtgggt	gcatgccagc	ctgctggcgc	660
aaaacaacac	ccgggtgtgg	gtgtggagcc	cgaccaaccc	gggagccagc	gatcccgccg	720
ccatgatcgg	ccaagccgcc	gaggcgatgg	gtaacagccg	catgttctac	aaccagtatc	780
gcagcgtcgg	cgggcacaac	ggacacttcg	acttcccagc	cagcgggtgac	aacggctggg	840
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<210> 96
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<213> Mycobacterium tuberculosis

<400> 96
Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu Gln Val Pro Ser
1 5 10 15

<210> 97
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 97
Leu Pro Val Glu Tyr Leu Gln Val Pro Ser Pro Ser Met Gly Arg
1 5 10 15

<210> 98
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 98
Leu Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val Gln
1 5 10 15

<210> 99
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 99
Pro Ser Met Gly Arg Asp Ile Lys Val Gln Phe Gln Ser Gly Gly
1 5 10 15

<210> 100
<211> 14
<212> PRT
<213> Mycobacterium tuberculosis

<400> 100
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1 5 10

<210> 101
<211> 15
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<213> Mycobacterium tuberculosis

<400> 101
Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala Leu Tyr Leu Leu Asp
1 5 10 15

<210> 102
<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 102

Ala	Asn	Ser	Pro	Ala	Leu	Tyr	Leu	Leu	Asp	Gly	Leu	Arg	Ala	Gln
1				5					10					15

<210> 103

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 103

Leu	Tyr	Leu	Leu	Asp	Gly	Leu	Arg	Ala	Gln	Asp	Asp	Phe	Ser	Gly
1			5						10					15

<210> 104

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 104

Gly	Leu	Arg	Ala	Gln	Asp	Asp	Phe	Ser	Gly	Trp	Asp	Ile	Asn	Thr
1				5					10					15

<210> 105

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 105

Asp	Asp	Phe	Ser	Gly	Trp	Asp	Ile	Asn	Thr	Pro	Ala	Phe	Glu	Trp
1				5					10					15

<210> 106

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 106

Trp	Asp	Ile	Asn	Thr	Pro	Ala	Phe	Glu	Trp	Tyr	Asp	Gln	Ser	Gly
1				5					10					15

<210> 107

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 107

Pro	Ala	Phe	Glu	Trp	Tyr	Asp	Gln	Ser	Gly	Leu	Ser	Val	Val	Met
1				5					10					15

<210> 108

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 108
Tyr Asp Gln Ser Gly Leu Ser Val Val Met Pro Val Gly Gly Gln
1 5 10 15

<210> 109
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 109
Leu Ser Val Val Met Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser
1 5 10 15

<210> 110
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 110
Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro
1 5 10 15

<210> 111
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 111
Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro Ala Cys Gly Lys Ala
1 5 10 15

<210> 112
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 112
Asp Trp Tyr Gln Pro Ala Cys Gly Lys Ala Gly Cys Gln Thr Tyr
1 5 10 15

<210> 113
<211> 15
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<213> Mycobacterium tuberculosis

<400> 113
Ala Cys Gly Lys Ala Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe
1 5 10 15

<210> 114
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 114
Gly Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu Lys
1 5 10 15

<210> 115
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 115
Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu Pro Gly Trp Leu Gln
1 5 10 15

<210> 116
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 116
Leu Thr Ser Glu Leu Pro Gly Trp Leu Gln Ala Asn Arg His Val
1 5 10 15

<210> 117
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 117
Pro Gly Trp Leu Gln Ala Asn Arg His Val Lys Pro Thr Gly Ser
1 5 10 15

<210> 118
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 118
Ala Asn Arg His Val Lys Pro Thr Gly Ser Ala Val Val Gly Lys
1 5 10 15

<210> 119
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 119
Ala Pro Thr Gly Ser Ala Val Val Gly Leu Ser Met Ala Ala Ser
1 5 10 15

<210> 120
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 120
Ala Val Val Gly Leu Ser Met Ala Ala Ser Ser Ala Leu Thr Leu
1 5 10 15

<210> 121
<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 121

Ser	Met	Ala	Ala	Ser	Ser	Ala	Leu	Thr	Leu	Ala	Ile	Tyr	His	Pro
1				5					10					15

<210> 122

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 122

Ser	Ala	Leu	Thr	Leu	Ala	Ile	Tyr	His	Pro	Gln	Gln	Phe	Val	Tyr
1				5					10					15

<210> 123

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 123

Ala	Ile	Tyr	His	Pro	Gln	Gln	Phe	Val	Tyr	Ala	Gly	Ala	Met	Ser
1				5					10					15

<210> 124

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 124

Gln	Gln	Phe	Val	Tyr	Ala	Gly	Ala	Met	Ser	Gly	Leu	Leu	Asp	Pro
1				5					10					15

<210> 125

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 125

Ala	Gly	Ala	Met	Ser	Gly	Leu	Leu	Asp	Pro	Ser	Gln	Ala	Met	Gly
1				5					10					15

<210> 126

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 126

Gly	Leu	Leu	Asp	Pro	Ser	Gln	Ala	Met	Gly	Pro	Thr	Leu	Ile	Gly
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<210> 127

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 127
Ser Gln Ala Met Gly Pro Thr Leu Ile Gly Leu Ala Met Gly Asp
1 5 10 15

<210> 128
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 128
Ser Thr Leu Ile Gly Leu Ala Met Gly Asp Ala Gly Gly Tyr Lys
1 5 10 15

<210> 129
<211> 15
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<213> Mycobacterium tuberculosis

<400> 129
Leu Ala Met Gly Asp Ala Gly Gly Tyr Lys Ala Ser Asp Met Trp
1 5 10 15

<210> 130
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 130
Ala Gly Gly Tyr Lys Ala Ser Asp Met Trp Gly Pro Lys Glu Asp
1 5 10 15

<210> 131
<211> 15
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<400> 131
Ala Ser Lys Met Trp Gly Pro Lys Glu Asp Pro Ala Trp Gln Arg
1 5 10 15

<210> 132
<211> 15
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<213> Mycobacterium tuberculosis

<400> 132
Gly Pro Lys Glu Asp Pro Ala Trp Gln Arg Asn Asp Pro Leu Leu
1 5 10 15

<210> 133
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 133
Pro Ala Trp Gln Arg Asn Asp Pro Leu Leu Asn Val Gly Lys Leu
1 5 10 15

<210> 134
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 134
Asn Asp Pro Leu Leu Asn Val Gly Lys Leu Ile Ala Asn Asn Thr
1 5 10 15

<210> 135
<211> 15
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<400> 135
Asn Val Gly Lys Leu Ile Ala Asn Asn Thr Arg Val Trp Val Tyr
1 5 10 15

<210> 136
<211> 15
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<400> 136
Ile Ala Asn Asn Thr Arg Val Trp Val Tyr Cys Gly Asn Gly Lys
1 5 10 15

<210> 137
<211> 15
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<213> Mycobacterium tuberculosis

<400> 137
Arg Val Trp Val Tyr Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly
1 5 10 15

<210> 138
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 138
Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro
1 5 10 15

<210> 139
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 139
Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro Ala Lys Phe Leu Glu
1 5 10 15

<210> 140
<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 140

Gly	Asn	Asn	Leu	Pro	Ala	Lys	Phe	Leu	Glu	Gly	Phe	Val	Arg	Thr
1				5					10					15

<210> 141

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 141

Gly	Lys	Phe	Leu	Glu	Gly	Phe	Val	Arg	Thr	Ser	Asn	Ile	Lys	Phe
1				5					10					15

<210> 142

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 142

Gly	Phe	Val	Arg	Thr	Ser	Asn	Ile	Lys	Phe	Gln	Asp	Ala	Tyr	Asn
1				5					10					15

<210> 143

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 143

Ser	Asn	Ile	Lys	Phe	Gln	Asp	Ala	Tyr	Asn	Ala	Gly	Gly	Gly	His
1				5					10					15

<210> 144

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 144

Gln	Asp	Ala	Tyr	Asn	Ala	Gly	Gly	Gly	His	Asn	Gly	Val	Phe	Asp
1				5					10					15

<210> 145

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 145

Ala	Gly	Gly	Gly	His	Asn	Gly	Val	Phe	Asp	Phe	Pro	Asp	Ser	Gly
1				5					10					15

<210> 146

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<400> 146
Asn Gly Val Phe Asp Phe Pro Asp Ser Gly Thr His Ser Trp Glu
1 5 10 15

<210> 147
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 147
Phe Pro Asp Ser Gly Thr His Ser Trp Glu Tyr Trp Gly Ala Gln
1 5 10 15

<210> 148
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 148
Thr His Ser Trp Glu Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys
1 5 10 15

<210> 149
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 149
Tyr Trp Gly Ala Gln Leu Asn Ala Met Lys Pro Asp Leu Gln Arg
1 5 10 15

<210> 150
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 150
Leu Asn Ala Met Lys Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr
1 5 10 15

<210> 151
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 151
Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr Pro Asn Thr Gly Pro
1 5 10 15

<210> 152
<211> 15
<212> PRT
<213> Mycobacterium tuberculosis

<400> 152
Ala Leu Gly Ala Thr Pro Asn Thr Gly Pro Ala Pro Gln Gly Ala
1 5 10 15

<210> 153
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 153
Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu Gln Val Pro Ser Pro
1 5 10 15
Ser Met

<210> 154
<211> 16
<212> PRT
<213> Mycobacterium tuberculosis

<400> 154
Asp Ile Lys Val Gln Phe Gln Ser Gly Gly Ala Asn Ser Pro Ala Leu
1 5 10 15

<210> 155
<211> 17
<212> PRT
<213> Mycobacterium tuberculosis

<400> 155
Pro Val Gly Gly Gln Ser Ser Phe Tyr Ser Asp Trp Tyr Gln Pro Ala
1 5 10 15
Cys

<210> 156
<211> 17
<212> PRT
<213> Mycobacterium tuberculosis

<400> 156
Ser Met Ala Ala Ser Ser Ala Leu Thr Leu Ala Ile Tyr His Pro Gln
1 5 10 15
Gln

<210> 157
<211> 18
<212> PRT
<213> Mycobacterium tuberculosis

<400> 157
Pro Gln Gln Phe Val Tyr Ala Gly Ala Met Ser Gly Leu Leu Asp Pro
1 5 10 15
Ser Gln

<210> 158
<211> 17
<212> PRT

<213> Mycobacterium tuberculosis

<400> 158

Cys Gly Asn Gly Lys Pro Ser Asp Leu Gly Gly Asn Asn Leu Pro Ala
1 5 10 15
Lys

<210> 159

<211> 16

<212> PRT

<213> Mycobacterium tuberculosis

<400> 159

Phe Gln Asp Ala Tyr Asn Ala Gly Gly Gly His Asn Gly Val Phe Asp
1 5 10 15

<210> 160

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<400> 160

Pro Asp Leu Gln Arg Ala Leu Gly Ala Thr Pro Asn Thr Gly
1 5 10